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The Economy and Environment Program for Southeast Asia (EEPSEA) was established in May 1993 to support training and research in environmental and resource economics across its 10 member countries: Cambodia, China, Indonesia, Lao PDR, Malaysia, Papua New Guinea, the Philippines, Sri Lanka, Thailand, and Vietnam. Its goal is to strengthen local capacity for the economic analysis of environmental problems so that researchers can provide sound advice to policymakers.

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Pricing Policies for Malaysia's Forests

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The way in which timber companies pay to use forests can have a profound effect on sustainable forest management. A well-designed pricing policy can help ensure the efficient utilization of forest resources, a long-term sustainable harvest and minimum ecological and environmental damage. Highlighting this, a new report shows that Peninsular Malaysia's pricing policy neither produces optimal financial returns for the government nor provides the best incentives for sustainable forestry practice. →

A summary of EEPSEA Research Report 2003-RR2, Forest Pricing Policy in Malaysia, by Awang Noor Abd. Ghani and Mohd. Shahwahid Hj. Othman. Contact: Awang Noor Abd. Ghani, Department of Forest Management, Faculty of Forestry, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia. awang@putra.upm.edu.my

The most striking result *was the*

The study was carried out by a team of researchers from the Universiti Putra Malaysia (Awang Noor Abd. Ghani, from the Department of Forest Management, and Mohd. Shahwahid Hj. Othman, from the Department of Hospitality & Recreation, Faculty of Economics and Management). They looked at concessions in several logging areas and found that the introduction of a tender system for logging concessions would be the best way to create an efficient market for logging rights. This, in turn, was predicted to improve both the competitive performance of logging companies and the equitable allocation of forestry revenue.

The Need for Better Pricing

The study was carried against the background of recent changes in Malaysia's forest industry. The economy has seen a significant shift towards manufacturing while agriculture has been beset with labour shortages, rising wages, and increasing competition from other land uses. The future of the forestry sector in Peninsular Malaysia is open to question and the need for sustainable management more important than ever. In light of this, the researchers decided to look at forest pricing policy to see how it could contribute to improving the overall economic and environmental performance of the sector.

The researchers began their investigations by looking at the current pricing policy framework in Peninsular Malaysia. The system typically comprises a mix of volume-based and area-based charges, the revenue from which provides a significant source of public funds in some states. The area-based forest charge is known as a premium and is levied for the right to harvest a specific concession area granted under a permit or a license. Volume-based timber fees include royalties and a silvicultural cess. Royalties are based on the actual volume of logs extracted from the forest. The cess has been collected in all states since 1973; its revenues are designated for forest rehabilitation and development. Rights to harvest timber from logging concessions are allocated using open or closed tendering, through negotiation or under long-term contracts.

Revenue vs Value

The research team then looked at how much revenue this system generates and whether this represents an optimal value. The research was carried out on logging sites in the states of Pahang and Terengganu. These states were chosen because of their importance as log producers, their broadly similar forests and their proximity to each other. Through consultation with state forest offices, research sites were chosen in 27 logging compartments in Pahang and 25 compartments in Terengganu. The sites in Pahang had relatively high royalty and premium charges, each delivering roughly equal shares of revenue. The Terengganu sites had lower royalties and premiums, with royalties providing the larger share.

Forest Figures

The researchers started their analysis by estimating the value of the timber in each area - its potential stumpage value. This is the total value that could be realized if a forest area is logged through clear felling. Since clear felling is not allowed in many areas, this value is a hypothetical maximum. They used a residual value technique to calculate stumpage values. In this approach, the value of standing timber is the difference between the price of the products that could be made from it and the stump-to-market processing costs (including margins for profit and risk). Data on log prices came from Amanah Saham Pahang - a state-based economic development agency and from previous surveys.

The researchers found that potential stumpage values ranged from MYR 7,078 (USD 1,862) to MYR 42,532 (USD 11,192) per hectare. Although the estimates of potential stumpage value varied by a factor of six, the researchers found that the average values in the two states were not much different (MYR 24,161 [USD 6,358] in

small size of government revenue

Pahang and MYR 24,503 [USD 6,448] in Terengganu).

Much logging in Malaysia is based on the Selective Management System (SMS), which prohibits the harvesting of trees below a certain diameter. Thus, the amount of potential stumpage value of the trees on a site is split between the stumpage value of those trees below the cutting limit (the prescribed silvicultural rent) and those above the cutting limit (the prescribed realized rent). In both states, the majority of the stumpage value was prescribed realised rent - 85% in Pahang and 65% in Terengganu. From this, the authors conclude that the amount of revenue forgone due to the SMS logging regulations is low.

A Bad Deal for the Government

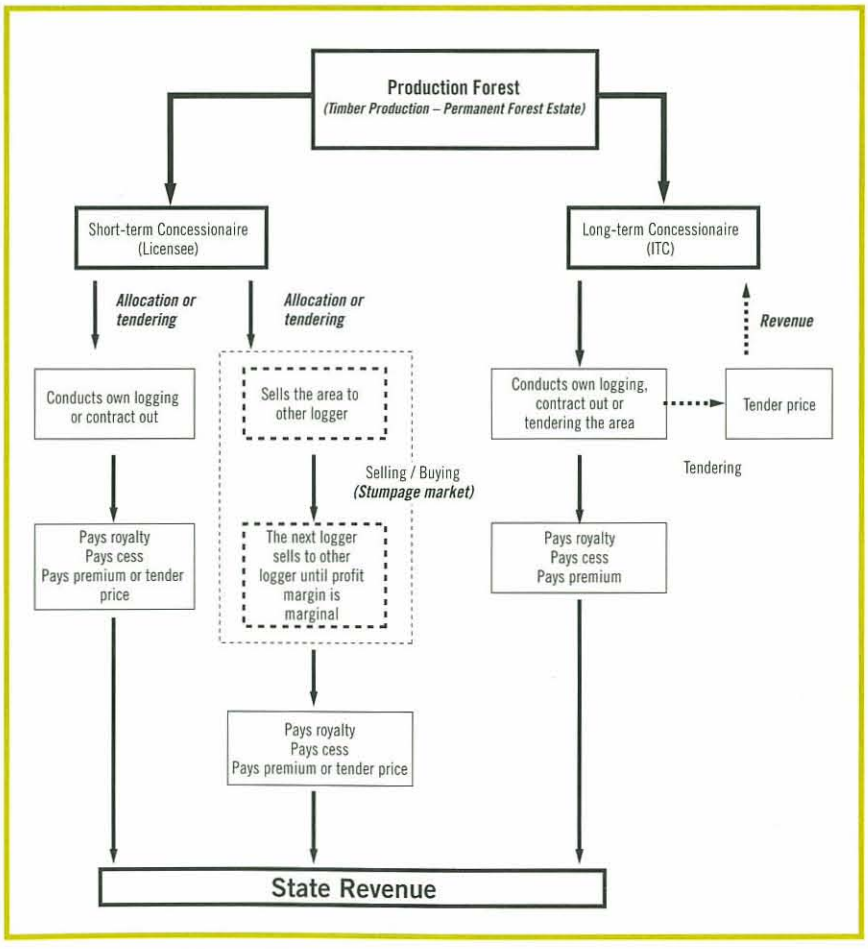
The researchers then investigated how much revenue the government is obtaining from the companies operating logging concessions. Estimates of government revenue were obtained from data on the royalty, silvicultural cess, and premiums. (The researchers were unable to obtain the relevant data from all logging compartments, so only figures for selected compartments were calculated). The most striking result was the small size of government revenue in most areas, relative to the prescribed realized rent (i.e. the value of the trees that could be harvested - and so the hypothetical financial value of the site). This ranged from 0.1% to 35.4% with an average of about 10%.

In light of this, the researchers investigated what kind of charging framework would provide the government with better returns. To do this they investigated how alternative royalty systems might perform. They assumed that concessionaires would aim for a profit margin of 30% (a level based on discussions with forest practitioners in the field) and then base their bid on prevailing market prices and harvesting techniques.

They found that under a competitive bidding system, the average bid price for logging concessions would be MYR 19,100 (USD 5,026) per hectare. Under a system based on fixed royalties and a premium equal to the estimated prescribed realized rent, the average amount be paid by a concessionaire would be MYR 16,278 (USD 4,283) per hectare.

A Better Deal Through Tendering

The study shows that the government



Forest Allocation System in Peninsular Malaysia

is currently collecting a relatively small share of the total possible commercial value of Peninsular Malaysia's forests. Drawing on findings from other studies, the authors warn that this could contribute to rapid depletion of forests, wasteful extraction practices, illegal logging, and a bias against conservation. They recommend that the government switch to a competitive bidding system or a fixed royalty and premium price system pegged to the hypothetical value of logging sites.

Competitive bidding (either through open or sealed bids) is a good method for granting forest concessions because it can capture significant revenue for the government, eliminate rent seeking behaviour by concessionaires, improve the transparency of timber disposal, and create incentives for efficient timber harvesting. To work well, however, such a system requires full information on timber volumes, log prices and logging costs and the absence of collusion among bidders. If these conditions exist, or can be created, there is great potential to us pricing policies to improve the management of Malaysia's forests.

3.8 MYR = 1 USD

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